APPENDIX.

THE PROPER USE OF THE TERM BIOLOGY.*

By Theodore Gill.

From the Presidential Address delivered January 28, 1881.

The father of modern natural history, following in the footsteps of his predecessors, recognized three kingdoms of nature, and allowed them equal rank in his scheme of classification. These were severally the subjects of the sciences designated as mineralogy, botany, and zoology. The contrasts between the characteristics of the first and the last two, and the generalities which have since compelled us to employ a term in common for botany and zoology, were not then appreciated. The same method and the same system of terminology were used by Linnæus for the description of the mineral as for the vegetable and animal kingdoms. Nevertheless suggestions had been made still earlier towards a segregation under a common head of the kingdoms of organic nature.

As early as 1587, Cristofle de Savigny, in a scarce and little-known work (Tableaux accomplis de tous les arts libéraux, Paris,) contrasted the organic kingdoms under a common denominator, *psychologie*, now universally accepted with a very different signification. The suggestion in question, however, fell still born. It was not till 1802 and 1803 that a term destined to general adoption was proposed. Then the illustrious Lamarck made use of the word Biologie as a common name under which to consider the phenomena presented by organic nature. A number of words were subsequently urged as substitutes and as better, *e. g.*, *Somiologie* by Rafinesque, in 1814; *Physique Organique* by Comte, in 1830; *Organomie* by d'Omalius d'Halloy, in 1838; *Zoologie* by Jean Reynaud, in 1843; *Organologie* by Gerdy, in 1844; and, lastly, *Zoonomy* by Baden Powell. None of them, however, have been received with favor, and, slowly at first, afterward by general consent, Biology was accepted as a term much needed to group the many generalities enunciable respecting animals and plants. The old professorships of natural history or of zoology and botany combined are now being replaced by professorships of biology, and almost *pari passu* with excessive (because exclusive) cultivation of special departments of botany and zoology has been a tendency to combine on common ground to consider the general laws and principles affecting alike the organic kingdoms of nature, and by students agreeing in the method which they employ in their several pursuits. As a result of this feeling has been born the Biological Society of Washington.

*Much discussion having attended the consideration of a name for the "Biological Society of Washington" the subject was treated of in the first presidential address, and that portion thereof relating to the question at issue is here reproduced.

The applicability of the term biology, in the sense now so generally accorded to it, is doubtless debatable, and has been strongly objected to by an eminent scholar, Baden Powell. That gentleman, in the first essay of his "Order of Nature," (§ 4, p. 173, note,) while discussing the "Theory of Life" and "Life in Geological Epoch," has uttered a protest against the use of the word in the following terms:

"While on this subject I cannot omit to take this occasion of recording my protest against the now prevalent, but barbarous use of the term 'Biology.' βίος never means 'life' in the sense of 'vitality;' it means the 'life' of a man as progressing in *time*—his birth, actions, and death. Plato has 'βίος ζωῆς,' the lifetime of a life. (Epinomis, [or the Philosopher,] 982.) Unfortunately the term 'Zoology,' which would be the proper one for this branch of science, has been already appropriated to what ought to have been called 'Zoography;' but there is still 'Zoonomy,' the science of the laws of life, open to adoption, and, at any rate, much better than '*biology*,' which, if it means anything, would be a theory of the facts of *biography*." *

On the other hand, a still more eminent and probably better scholar in Greek philology, William Whewell, has preferred the term biology to any other. In his "History of Scientific Ideas," under the caption of "The Philosophy of Biology," (Vol. 2, p. 170,) he urges that "the word *Physiology*, by which they [that is, to use again his own words, 'the organical sciences'] have most commonly been described, means the *science of nature;* and though it would be easy to explain, by reference to history, the train of thought by which the word was latterly restricted to *living nature*, it is plain that the name is, etymologically speaking, loose and improper. The term *biology*, which means exactly what we mean to express, *the science of life*, has often been used, and has of late become not uncommon among good writers."

It may be added that the word βίος, although doubtless generally used in the sense of lifetime, as urged by Baden Powell, nevertheless does not appear to have been limited to such meaning, but to have had practically the same range as our word life. Even if it were so limited, however, it would be eminently appropriate from the standpoint from which all scientific students of nature now take view, for it is the lifetime of nature and the questions of how organisms have been evolved and how grown and developed that must interest the students of life, plants and animals, as well as those organisms neither plants nor animals that formerly existed and still survive.

It is in fact the sum of those phenomena which may be aptly described as constituting the lifetime of nature that forms the true aim of what may, with the strictest and exact propriety, be called BIOLOGY.

The word seems to have been also used quite generally by entomologists in a very restricted sense; that is, as a common denominator for whatever relates to the special habits and manners of insects in contradistinction to Physiology. Thus Hagen, in his *Bibliotheca Entomologica*, (1863,) groups all entomological

* Powell, Order of Nature, Essay 1, § 4, p. 172, note, Theory of Life.

treatises under eight categories, viz: (1) Accessories and Generals; (2) Genera Entomology; (3) Special Entomology, *i. e.*, the subordinate groups, orders, etc. (4) Anatomy; (5) Physiology; (6) *Biology*; (7) Benefits from Insects; and (8) Injuries from Insects. This summary will give some idea of what entomologists intend by the word, and the original sense of the word, as indicated by Plato in the connection already indicated, might be used as an argument in justification. There would, indeed, be no strong objection to the use of the word to signify a study of habits had it not been abready, by general consent, used in another sense. Our well considered rules, as well in zoology as in botany, that priority determines the use of a name, and that the same name cannot be well used in two different senses, combine with the universal consecration of the term otherwise, to forbid us to use it in the limited sense indicated.